

Press release

nova-Institut GmbH (www.nova-institute.eu)

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Taking Carbon Capture and Utilisation (CCU) and Power-to-X to the next level – Final Program of the “Conference on CO₂-based Fuels and Chemicals 2023”

Leading international experts meet at one of the world’s key events on Carbon Capture and Utilisation (CCU) and Power-to-X from 19-20 April 2023 in Cologne, Germany, and online.

Besides biomass and recycling, CCU is one essential pillar for the supply of renewable carbon and therefore one of the key technologies for the successful transition to sustainable chemical and fuel production. It further provides a substitute for fossil feedstock sources. This is crucial to fight additional CO₂ emissions and climate change and to shift towards climate-friendly production and consumption. To utilise all benefits of CCU technologies the use of renewable energy and hydrogen is indispensable for the production of CO₂-based transportation and aviation fuels, bulk and fine chemicals and materials.

At the Conference on CO₂-based Fuels and Chemicals 2023 leading experts from industry and research will discuss the many possibilities of using CO₂ as a raw material for various industries. The program will cover the entire value chain reaching from innovation and strategy, to development and implementation of innovative CCU technologies, regulations and policy framework, to carbon capture, Power-to-Fuels as well as CO₂-to-Chemicals, polymers, materials and minerals conversion.

This year’s presentations include speakers from companies such as ArcelorMittal, Promethean Particles, RWE, Carbon Recycling International, LanzaTech, Econic Technologies, Borealis, Phytonix, Sulzer Chemtech and Twelve who will provide insights into their current advances in Carbon Capture and Utilisation.

In a dedicated parallel session, research institutes like DLR (DE), TNO (NL), VITO (BE) and IFPEN (FR) will highlight current research hot topics on carbon capture, electrochemistry and e-fuel production. Meanwhile, a dedicated research session on CCU will provide deep insights into ongoing advanced research in the field of CCU. Here experts from Avantium, FUNDITEC and Fraunhofer ICT will discuss their latest developments and findings.

For general orientation, the nova-Institute, CO₂ Value Europe as well as the University of Michigan will provide a comprehensive status quo and future perspective on CCU strategy and policy.

The conference will further present the innovation award “Best CO₂ Utilisation 2023”. Nominees will be announced at the end of February.

Find the latest program at <https://co2-chemistry.eu/program/>.

More information on the Conference on CO₂-based Fuels and Chemicals 2023 is available under <https://co2-chemistry.eu>.

From Innovation to Policy – The Full Program of the Conference on CO₂-based Fuels and Chemicals 2023

Innovation, Strategy and Policy

- Michael Carus and Christopher vom Berg, nova-Institute (DE) – CCU is Much More Than a Carbon Removal Technology
- Anastasios Perimenis, CO₂ Value Europe (BE) – A European Roadmap for Carbon Capture and Utilisation (CCU)
- Volker Sick, University of Michigan (US) – Track 2 CO₂-based Products
- Wim Van der Stricht, ArcelorMittal (BE) – The ArcelorMittal Strategy Towards Carbon Neutral Steel Production
- Nicolas Hark, nova-Institute (DE) – What Does EU Policy Have in Store for Carbon Capture?

Carbon Capture and Green Hydrogen Production

- Enric Prats-Salvado, Institut für Future Fuels, Deutsches Zentrum für Luft- und Raumfahrt (DLR) (DE) – Solar-Powered Direct Air Capture: Techno-Economic and Environmental Assessment
- Selina Ambrose, Promethean Particles (UK) – Metal Organic Frameworks (MOFs): Enabling Energy-Efficient Carbon Capture for the Growing CO₂ Utilisation Market
- Henrike Gebhardt, RWE (DE) – Green Hydrogen as Enabler for CO₂-based Value Chains

Power-to-X

- Elena Perez Gallent, TNO (NL) – Process Intensification of CCU Technologies: Integration of CO₂ Capture with Electrochemical CO₂ Conversion Towards Added Value Products
- Emeric Sarron, Carbon Recycling International (IS) – Commercial Scale Production of Methanol From Captured CO₂ and Hydrogen
- Babette Pettersen, LanzaTech (US) – Enabling a Circular Economy: Carbon-Negative Fuel and Chemical Production by Eliminating Waste

Power-to-Fuels

- Catherine Laroche, IFPEN (FR) – From CO₂ Capture to E-Fuels Production, Integration is Key
- Maartje Feenstra, Institute for Sustainable Futures, University of Technology Sydney (AU) – Sustainable Aviation Fuels in the One Earth Climate Model's 1.5° C Scenario: Where Does the (sustainable) Carbon Come From?

CO₂-to-Polymers and Materials

- Pauline Ruiz, nova-Institute (DE) – CO₂ Utilisation for Chemicals and Materials - An Overview on Technologies, Key Players, Markets and Trends
- Maurice Power, Eonic Technologies (UK) – Application of CO₂ Containing Polyols

- Jan Thiel, Institut für Textiltechnik der RWTH Aachen University (DE) – Application of CO₂-containing Thermoplastic Polyurethane Yarns in Elastic Textiles
- Floris Buijzen, Borealis (AT) – Turning Carbon Emissions Into Running Shoes
- Heleen de Wever and Deepak Pant, Flemish Institute for Technological Research (VITO) – Electrochemical Production of C1 Chemicals and their Bioconversion to Polymers

CO₂-to-Chemicals and Minerals

- Christine Rasche, Fraunhofer IGB (DE) – Combining Chemistry and Biotechnology for the Production of CO₂-based Chemicals – Chances and Risks
- Bruce Dannenberg, Phytonix Corporation and Cyanomega Corporation (US) – Carbon Dioxide Utilization Via Photosynthetic Conversion to Higher Alcohols and Fatty Acids to Address the Climate Crises and Create a Circular Carbon Economy: From Laboratory to Commercialization
- Cecilia Mondelli, Sulzer Chemtech (CH) – CO₂ Capture Meets Mineralization in the Liquid Phase for a Sustainable Construction Industry
- Mohammad Rezaei, GIG Karasek (AU) – Electrochemical CO₂ Transformation: Efforts and Perspectives of an Industrial Plant Constructor
- Nicholas Flanders, Twelve (US): Carbon Transformation: A World from Air

Parallel Session Advanced Research in CCU

- Sophie van Vreeswijk, Avantium (NL): Circular Utilisation of CO₂ from Waste Water in the WaterProof Project
- Dulce Muñoz, Fundacion para el Desarrollo y la Innovacion Tecnologica (FUNDITEC) (ES): Valuable Chemicals from CO₂ and Renewable Feedstocks, a Polyimine-based Heterogeneous Catalysts Approach
- Verena Süß, Fraunhofer ICT (DE): Synthesis of Ethanol from CO₂ and H₂

nova-Institute would like to thank Yncoris for sponsoring the award the “Best CO₂ Utilisation 2023” and CO₂ Value Europe for co-organisation. GIG Karasek is supporting the event as a Bronze Sponsor.

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nova-Institute is a private and independent research institute, founded in 1994; nova offers research and consultancy with a focus on the transition of the chemical and material industry to renewable carbon: How to substitute fossil carbon with biomass, direct CO₂ utilisation and recycling. We offer our unique understanding to support the transition of your business into a climate neutral future. nova-Institute has more than 40 employees.

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